

Name: _____

Date: _____

A2 CC1 Dividing Radicals

Warm Up:

Simplify the following:

$$8\sqrt{8} + 2\sqrt{24} - 2\sqrt{18}$$

- Jonathan said that $\frac{\sqrt{10}}{2} = \sqrt{5}$. Do you agree with Jonathan? Justify your answer.
- Show that the quotient of two irrational numbers can be either rational or irrational.

Developing Skills

In 3–29 write each quotient in simplest form. Variables in the radicand with an even index are non-negative. Variables occurring in the denominator of a fraction are non-zero.

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| 3. $\sqrt{24} \div \sqrt{6}$ | 4. $\sqrt{75} \div \sqrt{3}$ | 5. $\sqrt{72} \div \sqrt{8}$ |
| 6. $\sqrt{50a^3} \div \sqrt{5a}$ | 7. $\sqrt{24x^2} \div \sqrt{3x^3}$ | 8. $\frac{\sqrt{150}}{\sqrt{3}}$ |
| 9. $\frac{\sqrt{54}}{\sqrt{2}}$ | 10. $\frac{\sqrt{300}}{\sqrt{25}}$ | 11. $\frac{\sqrt{35a^3}}{\sqrt{10a}}$ |
| 12. $\frac{\sqrt{80x^2y}}{\sqrt{30xy^2}}$ | 13. $\frac{\sqrt{27b}}{\sqrt{6b^2}}$ | 14. $\frac{3}{\sqrt{3x}}$ |
| 15. $\frac{7}{\sqrt{7y}}$ | 16. $\frac{\sqrt{12a^2}}{\sqrt{4a}}$ | 17. $\frac{\sqrt{18c^3}}{\sqrt{9c}}$ |
| 18. $\frac{4\sqrt{2} + 8\sqrt{12}}{2\sqrt{2}}$ | 19. $\frac{3\sqrt{10} - 9\sqrt{50}}{3\sqrt{5}}$ | 20. $\frac{\sqrt{72} + \sqrt{54}}{\sqrt{18}}$ |
| 21. $\frac{\sqrt{20} - \sqrt{5}}{\sqrt{5}}$ | 22. $\frac{\sqrt{48} + \sqrt{3}}{\sqrt{3}}$ | 23. $\frac{\sqrt{10} + \sqrt{15}}{\sqrt{10}}$ |
| 24. $\frac{5 + 6\sqrt{5}}{\sqrt{5}}$ | 25. $\frac{\sqrt[3]{27x^3} + \sqrt[3]{36x^5}}{\sqrt[3]{3x^3}}$ | 26. $\frac{\sqrt[4]{ab^4}}{\sqrt[4]{a^2b^4}}$ |
| 27. $\frac{\sqrt[4]{c^6}}{\sqrt[3]{c^3}}$ | 28. $\frac{\sqrt[3]{24w^2}}{\sqrt[3]{3w^4}}$ | 29. $\frac{\sqrt{64x^4} + \sqrt[4]{40x^6}}{\sqrt[4]{x^6}}$ |